Web of Life Game*

Objective: The students will learn how animals compete for resources and the impacts an exotic species can have on a natural ecosystem.

Time requirement: 20-30 minutes

Materials:

- identity tag* for each student – for a class of 30, the tags should be made as follows:
- 10 small fish *use copies of photos from Native Fish and Mussels
- 10 native mussels
- 10 larger "predator" fish
- write "ZEBRA MUSSEL" on the back of each identity tag
- 150 blue game pieces (these pieces represent dissolved oxygen)
- 150 red game pieces (these pieces represent zooplankton)
- cones or flags for game area boundaries
- pencil and paper to record the results of each round for later discussion

For the game pieces, you can use colored popsicle or craft sticks, colored plastic spoons, colored paper, poker chips, or anything that will not blow away (if played outdoors) and can be easily picked up after the game is over.

Introduction: Zebra mussels are just one of may exotic species that have "stowed away" in ships from Europe and Asia and now live the Great Lakes and the Mississippi River. (See the enclosed, "A Field Guide to Aquatic Exotic Plants and Animals" for more information). Like many exotic species, zebra mussels have an ecological impact on the areas they inhabit, out-competing native species for food and oxygen. In the "Web of Life Game", students will take the roles of the species mot directly impacted by the zebra mussel to discover the delicate balance in a river ecosystem.

*This activity is adapted from "Zebra Mussel Mania Teacher's Guide", Illinois-Indiana Sea Grant Program.

Setting up the game: the following instructions are based on 30 students. Adjust the numbers as needed using a staring ratio of 1:1:1.

Object of the game: to survive as long as possible.

Directions for students:

Round One:

1. Students put on the nametags with the fish or mussel picture facing out and the teacher scatters the food and oxygen pieces in the playing area. Record the starting numbers of each species.
2. At a signal from the teacher, all fish and mussels scramble to get as many game pieces as possible.
3. When all of the game pieces have been gathered up, regroup to determine who has survived based on the following chart.

	Dissolved Oxygen	Zooplankton
Small fish	4	4
native mussels	4	4
larger "predator" fish	8	8
ZEBRA MUSSEL	2	2

4. Species must have at least the required number of each game pieces to survive. Survivors remain in the game for the next round. Record the number of survivors. Species who did not have the required number of game pieces die and are "recycled" into Zebra Mussels for the next round…they should turn their species tag over to display Zebra Mussel.

Round Two:

5. Collect and rescatter the game pieces. Again, at a signal from the teacher, have students collect as many game pieces as they can.
6. Repeat the counting process to determine who survived, recording the numbers of survivors after each round If many animals besides Zebra Mussels survive, repeat another round or two.
7. The results may be different each time the game is played. If you choose, play the game again in the same manner or using different starting numbers of species for different results.